

CLAIMS

1 1. A system for electrically interconnecting components, said system comprising:
2 a flex cable assembly having a flex cable, a first connector and a retention
3 member, the first connector being attached to and electrically interconnected with a
4 first end of the flex cable, the retention member extending outwardly from the flex
5 cable;
6 a support structure defining an orifice and an anchor, the orifice being sized
7 and shaped to receive the retention member such that a portion of the retention
8 member can be inserted into the orifice to form an interference fit, thereby
9 mechanically supporting the flex cable assembly; and
10 a printed circuit board (PCB) having a second connector and a shaft, the
11 second connector being sized and shaped to electrically interconnect with the first
12 connector, the shaft being rotatably mounted to the PCB and having a distal end
13 configured to engage the anchor of the support structure such that, as the distal end of
14 the shaft engages the anchor and the shaft is rotated, the second connector is aligned
15 with and moved toward mating engagement with the first connector.

1 2. The system of claim 1, wherein the PCB has a first shaft mount and a second
2 shaft mount spaced therefrom, each said shaft mount defining an orifice through
3 which the shaft extends.

1 3. The system of claim 1, wherein the anchor defines an orifice and the distal end
2 of the shaft is sized and shaped to engage within the orifice.

1 4. The system of claim 1, wherein the retention member has a post and a cap
2 attached to an end of the post, the cap including multiple segments, each of which
3 extends outwardly from the post, each of the segments being deflectable toward the
4 post in response to a biasing force.

1 5. The system of claim 4, wherein the flex cable assembly has a plate from which
2 the retention member extends, the plate being located such that the flex cable is
3 arranged at least partially between the plate and the first connector.

1 6. The system of claim 1, wherein the support structure has a first protruding
2 portion and a second protruding portion, each of which extends outwardly from a
3 centerline of the support structure; and
4 wherein the anchor extends across the flex cable from the first protruding
5 portion to the second protruding portion such that the flex cable is arranged at least
6 partially between the anchor and the support structure.

1 7. The system of claim 1, wherein the second connector is mounted to the PCB
2 adjacent to the distal end of the shaft

1 8. The system of claim 1, wherein the retention member and orifice are sized and
2 shaped to permit movement of the retention member when engaged in the interference
3 fit.

1 9. A system for electrically interconnecting components, said system comprising:
2 a flex cable having a first end and a second end;
3 a first connector attached to and electrically communicating with the first end
4 of the flex cable;
5 a second connector attached to and electrically communicating with the second
6 end of the flex cable;
7 a first retention member extending outwardly from the flex cable, the first
8 retention member having a post and a cap, the post having a first end located adjacent
9 to the flex cable and a second end to which the cap is attached, the cap including
10 multiple segments, each of which extends outwardly from the second end of the post,
11 each of the segments being deflectable toward the post in response to a biasing force.

1 10. The system of claim 9, wherein the cap is generally dome-shaped.

1 11. The system of claim 10, wherein each of the segments is generally triangle-
2 shaped.

1 12. The system of claim 9, further comprising:
2 a plate mounted adjacent to the first connector, the first retention member
3 extending outwardly from the plate.

1 13. The system of claim 9, further comprising:
2 means for mounting the first retention member adjacent to the first connector.

1 14. The system of claim 9, further comprising:
2 a second retention member extending outwardly from the flex cable, the
3 second retention member having a post and a cap, the post having a first end located
4 adjacent to the flex cable and as second end to which the cap is attached, the cap
5 including multiple segments, each of which extends outwardly from the second end of
6 the post, each of the segments being deflectable toward the post in response to a
7 biasing force.

1 15. The system of claim 14, wherein the first and second retention members are
2 mounted adjacent to the first connector.

1 16. A system comprising:
2 a chassis having an anchor;
3 a flex cable assembly sized and shaped to be mounted at least partially within
4 the chassis, the assembly having a flex cable, a first connector, the first connector
5 being attached to and electrically interconnected with a first end of the flex cable; and
6 an electronic component sized and shaped to be mounted at least partially
7 within the chassis, the electronic component having a second connector and a shaft,
8 the second connector being sized and shaped to electrically interconnect with the first
9 connector of the flex cable assembly, the shaft being rotatably mounted to the
10 electronic component and having a distal end configured to engage the anchor of the
11 chassis such that, as the distal end of the shaft engages the anchor and the shaft is
12 rotated, the second connector is aligned with and moved toward mating engagement
13 with the first connector.

- 1 17. The system of claim 16, wherein the anchor defines an internally-threaded
2 orifice and the distal end of the shaft is externally threaded.
- 1 18. The system of claim 16, wherein the electronic component is a printed circuit
2 board.
- 1 19. The system of claim 16, wherein the assembly has a retention member
2 extending outwardly from the flex cable; and
3 wherein the chassis defines an orifice, the orifice being sized and shaped to
4 receive the retention member such that a portion of the retention member can be
5 inserted into the orifice to form an interference fit, thereby mechanically supporting
6 the first end of the flex cable with respect to the chassis.
- 1 20. The system of claim 16, wherein the retention member has a post and a cap
2 attached to an end of the post, the cap including multiple segments, each of which
3 extends outwardly from the post, each of the segments being deflectable toward the
4 post in response to a biasing force.
- 1 21. The system of claim 15, wherein the chassis defines an interior and has a
2 support structure extending into the interior; and
3 wherein, in a mounted position, the anchor extends across the flex cable such
4 that the flex cable is arranged at least partially between the anchor and the support
5 structure.

1 22. A system for electrically interconnecting components, the components being
2 mounted within a structure, said system comprising:
3 a flex cable having a first end and a second end;
4 a first connector attached to and electrically communicating with the first end
5 of the flex cable;
6 a second connector attached to and electrically communicating with the second
7 end of the flex cable; and
8 means for supporting the first end of the flex cable such that the first connector
9 is positioned for electrically engaging a first of the components.

1 23. A method for electrically interconnecting components comprising:
2 providing a flex cable having a connector attached to a first end thereof;
3 providing a support structure; and
4 forming an interference fit between the support structure and a portion of the
5 flex cable such that the first end of the flex cable is supported by the support structure.

1 24. The method of claim 23, wherein, after forming the interference fit, the first
2 end of the flex cable is able to move with respect to the support structure.

1 25. The method of claim 23, further comprising:
2 providing a component; and
3 electrically interconnecting the component with the connector of the flex
4 cable.

1 26. The method of claim 25, wherein, in electrically interconnecting the
2 component, the component is blind-mated to the flex cable.

1 27. The method of claim 25, wherein the support structure and the component
2 each have an alignment feature; and
3 wherein, in electrically interconnecting the component and the flex cable, the
4 alignment feature of the component is engaged with the alignment feature of the
5 support structure.